Plug-in: DidlSigProcessor

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1. Introduction

Plugin Name: DidlSigProcessor

Classpath : gov.lanl.ingest.oaitape.aps.DidlSigProcessor

Description: A DIDL De-referencing Processor Plug-in providing XML Signature support.

To support object complexity and variability, this de-referencing processor uses:

- MPEG-21 DID to package an asset of the producing archive as an application-neutral, XML-based OAIS DIP of that asset. The Content Information Identifier of the asset is conveyed in a manner compliant with MPEG-21 DII.
- OAI-PMH to expose the XML-based OAIS DIPs from the producing archive. The notion of the OAI-PMH datestamp applied to these XML packages guarantees synchronicity between the producing and the consuming archives.

To ensure accuracy and authenticity, this de-referencing processor uses:

- W3C XML Signatures embedded in an OAIS DIP to allow verifying the integrity and authenticity of constituent datastreams of a represented asset.
- W3C XML Signatures computed over the complete XML-based OAIS DIP, provided in the 'about' container of an OAI-PMH response, to allow verifying the authenticity and integrity of the XML-based OAIS DIP itself.

2. Design

- Producing archives expose OAIS Dissemination Information Packages (OAIS DIPs) through an OAI-PMH interface (2 in Figure 1).
- Exposed OAIS DIPs result from – dynamically – mapping the assets in the producing archive (packaged in AIP1 in Figure 1) to the Abstract Model for Digital Items as defined by the MPEG-21 DID standard.
- Following this mapping, an XML-based representation of the Digital Item is provided and embedded in a package in a manner that is also compliant with the MPEG-21 DID standard. The resulting OAIS DIPs are application-neutral.
- When transferred through the OAI-PMH, the OAIS DIPs (2 in Figure 1) disseminated by the producing archive become OAIS Submission Information Packages (OAIS SIPs) to the consuming archive (3 in Figure 1).
- Once transferred, the consuming archive can map the asset packaged in the application-neutral OAIS SIP to the MPEG-21 DID Abstract Model. The asset can then be represented and packaged as an OAIS Archival Information Package (OAIS AIP), compliant with all other OAIS AIPs stored in the consuming archive (AIP2 in Figure 1).

- The consuming archive itself may re-expose the retrieved assets using the same technique, thereby allowing the producing archive, as well as other archives to incrementally collect assets.

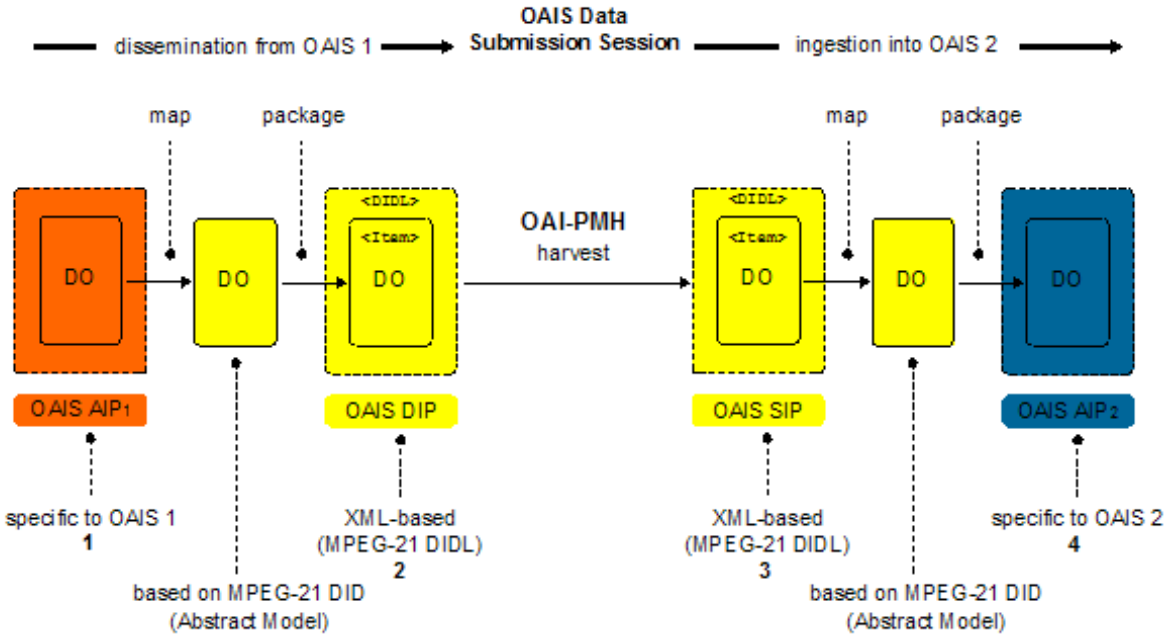

Figure 1

3. Additional Information

Bekaert, J., Van de Sompel, H. (2005, June).
A Standards-based Solution for the Accurate Transfer of Digital Assets
D-Lib Magazine, 11(6)